1237962

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October 16, 2004

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APPLICATION NUMBER: *60/504,977*
FILING DATE: *September 23, 2003*
RELATED PCT APPLICATION NUMBER: *PCT/US04/31491*

Certified by

Jon W Dudas

Acting Under Secretary of Commerce
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PTO/SB/16 (8-00)
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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
John A.	Gelardi	Kennebunk, Maine

☐ *Additional inventors are being named on the ___ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (280 characters max)

Unit Dose Locking Container

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

☐ Customer Number [ ] → *Place Customer Number Bar Code Label here*

OR *Type Customer Number here*

☒ Firm or Individual Name	James C. Wray				
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Address	Suite 300				
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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 12 ☐ CD(s), Number [ ]

☒ Drawing(s) *Number of Sheets* 13 ☐ Other (specify) [ ]

☐ Application Data Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT *(check one)*

☐ Applicant claims small entity status. See 37 CFR 1.27.

☒ A check or money order is enclosed to cover the filing fees

☐ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: [ ]

☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE AMOUNT ($): $160.00

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE J C Wray

Date 09/23/03

TYPED or PRINTED NAME James C. Wray

REGISTRATION NO. (if appropriate) 22,693

Docket Number: WESTVACO

TELEPHONE (703) 442-4800

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

17667 U.S. PTO

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FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 160.00

Complete if Known	
Application Number	
Filing Date	09/23/2003
First Named Inventor	John A. Gelardi
Examiner Name	
Art Unit	
Attorney Docket No.	WESTVACO

METHOD OF PAYMENT *(check all that apply)*

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	160

SUBTOTAL (1) ($) 160.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims		Fee from below	Fee Paid
Total Claims		-20** =		X =
Independent Claims		-3** =		X =
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	42	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for *ex parte* reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($)

SUBMITTED BY				(Complete *if applicable*)	
Name (Print/Type)	James C. Wray	Registration No. (Attorney/Agent)	22,693	Telephone	(703) 442-4800
Signature				Date	09/23/2003

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Unit Dose Locking Container

BACKGROUND OF THE INVENTION

Locking containers, especially childproof locking containers, in which multiple movements must be applied to open the container, have many uses. One use for locking containers is medicine containers. Locking caps on medicine bottles are well known. The caps usually require alignment and tipping of caps or axial pressure or inward radial squeezing while turning the caps to remove the caps from the containers and to provide access to medicine therein.

Many medicines are packaged in flat boxes, which are difficult to secure with childproof locks. Many medicines are sold in blister packs with bubbles formed in a plastic sheet sealed by a paper layer or foil which is punctured sequentially to release one dose from one bubble. When a cardboard sleeve is opened, the entire contents of the package is exposed, making all of the doses immediately available by puncturing the sealing sheet.

Needs exist for flat boxes that have locks which require multiple coordinated motions for opening. Needs exist for packages that present a limited number of doses at one time. Needs exist for inexpensive locking boxes.

SUMMARY OF THE INVENTION

Blister laminates are generally inserted and assembled in the manufacturing facilities through automation.

The invention allows local pharmacists to insert the blister medications into the casings. Casings can be re-used for prescription refills.

The invention is a child-resistant safety container for medications stored in a blister pack. A two-piece molded plastic container closed on 3 edges has a rectangular blister pack slidable through the open forth edge. Posts molded on one side are welded with the corresponding hollow cylinders molded on the other side. Energy directors may weld side edges. Two flexible springs are molded on one side and hold the blister pack against the other side of the container. At least one catch is molded on the same side and it fits through the opening that is a part of the blister pack. It prevents the blister pack from being fully removed. Pressing on the lever distorts the opening in the blister pack which can be slid out of the container. Ramps on the blacks of the catches depress the blister pack as it is slid inward.

This invention allows blister packs to be loaded into the case at the retail stores. It reduces costs of assembly. The casing can be re-used.

The new invention fulfills needs in single dose packaging.

A child-resistant safety container for medications stored in a blister pack has a two-piece molded plastic sleeve closed on three edges. A rectangular blister pack is slidable through the open fourth edge to expose a row of bubbles upon a manipulation of the parts. Posts molded on one side are inserted into and

welded with hollow cylinders molded on the other side. Energy directors may sonically weld side edges, as well as the posts and cylinders. A spring near the open edge fits through an opening in the blister pack tray and acts as a travel limit when the tray is slid out. Two flexible springs and four fixed rails are molded on a first side and hold the flat back of the blister pack against a second side of the sleeve. A molded catch on the second side near a closed end fits through an opening in the blister pack and prevents a fully inserted blister pack from sliding outward. Pressing on a lever distorts the blister pack so that the molded catch no longer engages the opening in the blister pack, which can be slid outward in the container to expose the blisters. A ramp on the back of the catch depresses the blister pack as it is slid inward. The leaf spring near the open end in the blister pack tray engages the opening and prevents the tray from being fully removed from the envelope.

The package has a sliding bubble container tray and a locking sleeve made from a base and a top. The tray is made from conventional bubble dose packing material with bubbles formed in a single layer plastic top holding pills on a sealed paper or foil base. The paper or foil is pushed in, cut or punched beneath one bubble at a time to release one dose. A standard bubble tray or blister pack is used and provides all necessary structural rigidity for functioning of the parts. The top is placed on the base. The pins are inserted in the cylinders and the plastic sleeve is welded shut. The bubble tray is placed in

the opening and is pushed inward past the limit spring and on the sliding guides of the base, between guiding cylinders. Springs formed in the top urge the bubble tray toward sliding ribs on the base. The catch holds the tray in the sleeve.

Pressing inward on the U-shaped tab on the base warps a part of the tray against the force of springs away from the catch on the base. The warping of the tray moves the hole away from the detent so that the tray may be slid outward through the open end of the sleeve.

The bubble tray is a conventional blister package. The whole cross-section of the plastic blister layer and the paper base provide strength. A constant containment element surrounds the blister package and forms the new locking package. Reverse pressure easily slides the blister package back into the containment element without manipulation of parts.

These and further and other objects and features of the invention are apparent in the disclosure, which includes the above and ongoing written specification, with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is an exploded top perspective view of the locking blister package.

Figure 2 is an exploded bottom perspective view of the locking package.

Figure 3 is a bottom perspective view of the closed locking package.

Figure 4 is a transparent top perspective view of the locking package with the blister panel moved partially outward from a slightly modified rounded closed end container.

Figure 5 is a top perspective transparent view of the container with the blister panel ready for loading.

Figure 6 is a transparent perspective bottom view of the container.

Figure 7 is a perspective top view of the locking package with the blister panel slid partially outward.

Figure 8 is a perspective bottom view of the locking package.

Figure 9 is an exploded bottom perspective view of the open container and bubble tray.

Figure 10 is an exploded perspective top view of the container and bubble tray.

Figure 11 is a bottom perspective assembled view of the closed package.

Figure 12 is an alternate package with multiple detent openings in the blister panel and a T-shaped release panel.

Figure 13 is a top perspective view of the package of Figure 12 showing positions of elements of the base, top and bubble tray.

Figure 14 is an exploded perspective view showing positions of elements of the base, top and bubble tray.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figures 1-3 are top and bottom exploded views and a bottom view of the locking package. As shown in Figure 1, a locking cassette container 10 has a sliding unit dose bubble package tray 12 with a locking sleeve 14. The locking sleeve has a base 16 and a top 18. A push U-shaped flap 20 is formed in an opening 21 and is connected to and integrally formed with the container by a thin resilient living hinge section 22. Pushing on the free end 24 of the push release flap frees the tray 12. The inside of free end 24 has a curved rim 25. Gripping the exposed end 26 of the tray in the recess 28 in the open end of the base and pulling outward while flap 20 is depressed enables the outward sliding.

The bubble package tray 12 has single dose-containing bubbles 30 arranged in two columns 32. The tray is constructed of the same materials with strengths and thicknesses as are conventional in bubble package trays sold in traditional rectangular cardboard sleeves, which are sealed on folded ends.

The bubble tray 12 has a hole 34, which releases the tray and prevents removal of the tray from the sleeve 14. Hole 34 positioned beyond the bubbles 30 cooperates with the detent 29 on the base to prevent outward movement of the tray until it is intentionally and properly released by pressing inward on flap 20. A rib at the end of the tray closes the open end 40 of the sleeve 14 when the tray is pushed inward, preventing access to the bubbles 30. The rib fits within cutout 28 and aids in outward sliding of the tray. Openings 46 in the sleeve top 18

allow the inward forming of springs 48 which press the tray against ribs on the base 16 and force hole 34 into engagement with retaining detent 29.

Figure 3 is a top view of the closed locking package 10. In the closed position the rib 38 closes open end 40 of the sleeve 14. The rib 38 presses against the inside of the top 18.

Cylinders 50 along side walls 52 of the base 16 are ready to receive pins 51 extending downward from an inside of the top. A dagger spring 54 centered in the top 18 near the open end 40 above the recess 28 at the open end of the base extends through the central hole 34 in the tray 12, to prevent complete removal of the tray. Detent 29 projects through the hole 34 to lock the tray 12 in the sleeve 14. Dagger spring 54 may be depressed by an inserted blade or card to withdraw the dagger spring from opening 36 for releasing an empty bubble panel 12 in preparation for inserting of a full bubble panel.

A rib at the inner end of the sleeve fits between springs 48. Inner ribs 58 inside the top 18 stabilize the tray as it is extended.

The top 18 is pressed onto the bottom, with the pins 51 pressed into the cylinders 50. Energy directors on insides of the cylinders and along the side walls 52 of the base 16 fuse and weld the top to the base under pressure and ultrasonic energy.

Figure 4 is a partially extended transparent sleeve top view of a closed modified rounded end locking package 11. In the

configuration shown in Figure 4, after the top 18 is assembled on the base 16, the tray is placed in the base.

Figure 5 is a transparent bottom view of the sleeve 14 of package 11 ready for insertion of the panel 12. The inside of the top 18 has ribs aligned between springs 48 to hold the tray against guides 64 on the inside of the base 16. The ribs and springs 48 are of sufficient height so that the bubbles are spaced from the inside of the top.

The head 24 of the U-shaped flap 20 is aligned between the springs 48 to warp the tray in the direction of the springs at gaps 66 between inner ends 68 of the ribs 58, and thus to release the hole 34 in tray 12 from the detent 29.

Figure 6 is an assembled bottom view of the container. Guides 64 on the inside of the base facilitate sliding of the tray. Ridges at the inside of base side walls 52 may fit inside of complementary side walls on the top 18. Push tray release flap 20 has a rib 25 on the inside of the head 24 of the flap. Rib 25 cooperates with the detent 29. As the rib 25 is pushed inward, an adjacent part of the bubble tray is warped toward the top 18 against the force of springs 48, releasing the tray from engagement with detent 29. Detent 29 has a straight or hook-shaped inward face 76 to hold the tray and prevent outward movement unless push bar 20 and rib 25 warp the tray away from the detents. Sloping outer face 78 on the detent warps the tray away from the detent upon inward movement of the tray, allowing free inward movement upon pushing on the free end of the tray.

Figure 7 is a partially opened top view of the locking package 11. Initials of days of the week between the bubbles serve as reminders. After a pill is removed from a bubble 30, the tray may be slid inward. During inward sliding, the sloped surface 78 urges the hole 34 and the tray 12 away from the detent 29.

Figure 8 is a cross-sectional bottom view of the locking package with the tray 12 moved partially outward.

Figure 9 is an exploded transparent bottom view of the container 11 and bubble tray 12. The tray 12 is shown in an intermediate position with respect to the base 16 in Figure 8. When fully inserted, hole 34 engages the detent 29.

Figure 10 is a top exploded transparent view of the container sleeve 14 and bubble tray 12. In Figure 10 the tray 12 is shown in an intermediate position.

Figure 11 is a bottom assembled view of the closed package 11. The push flap 20 is molded in an inward position in base 16 of the locking sleeve 14.

Figures 12-14 show bottom closed, top open and exploded views of a modified form of a container 1 showing the relative positions of elements of the base, top and tray. In Figures 12 and 13, the top 18 and base 16 are shown in assembled position. The T-shaped push bar 20 is molded inward, and is pressed outward by a tray. Springs 48 are molded inward in the top 18, so that they extend slightly beyond the inward extension of the ribs.

Thus, the springs support the tray in holding the T-bar outward. A rib at the outer end of the tray closes the open end 40.

The sloping back surfaces of the detents and the inward surfaces of ribs are radiused along with other tray-contacting surfaces to facilitate sliding of the tray or moving of the surfaces. The outer surface of the push bar has frictional grooves to aid in pushing the bar inward.

Figure 14 is an exploded detail showing positions of elements of the base, top and bubble tray. In Figure 14 the push bar 20 and the springs 48 are shown in positions after inserting the tray.

Parallel holes 34 engage parallel detents formed midway in the base slightly toward the open end 40 from the hole.

The top and base are pressed inward and welded together. The bubble tray is inserted. Pressing inward on the T-shaped bar 20 on the base 16 warps a part of the tray 12 between ribs against the force of springs 48 away from the base. The warping of the tray moves the holes 34 away from the detents 29 so that the tray 12 may be slid through the open end 40 of the sleeve 14. Releasing the bar 20 stops the tray in the next outward position.

The bubble tray is a conventional blister package with a hole or holes 34 added. The whole laminated cross-section of the plastic blister layer and the paper base provides strength. A constant containment element surrounds the blister package and forms the new locking package. Detents in one hole or holes in parallel series of holes prevent unwanted outward movement of the

tray. A push, pull and release sequence limits the exposure of blisters. Reverse pressure easily slides the blister tray back into the containment elements without manipulation of parts.

While the invention has been described with reference to specific embodiments, modifications and variations of the invention may be constructed without departing from the scope of the invention.

ABSTRACT OF THE DISCLOSURE

A package has a sliding bubble container tray and a locking sleeve made from a base and a top. The tray is made from conventional blister dose packaging material, with bubbles formed in a single layer plastic top holding pills on a sealing paper, board or foil layer. The sealing layer is punched beneath one bubble at a time to release one dose. The top and base are closed. Bubble trays are slid between the sliding guides of the base and between guiding cylinders and pushed inward until detents engage openings. Springs formed in the top urge the bubble tray toward the guides on the base. Pressing inward on a flap on the base moves a part of the tray against the force of springs away from the base. Warping the tray moves a hole away from a detent so that the tray may be slid through the open end of the sleeve. A constant containment element surrounds the blister package and forms the new locking package. Reverse pressure easily slides the blister package back into the containment element without manipulation of parts.

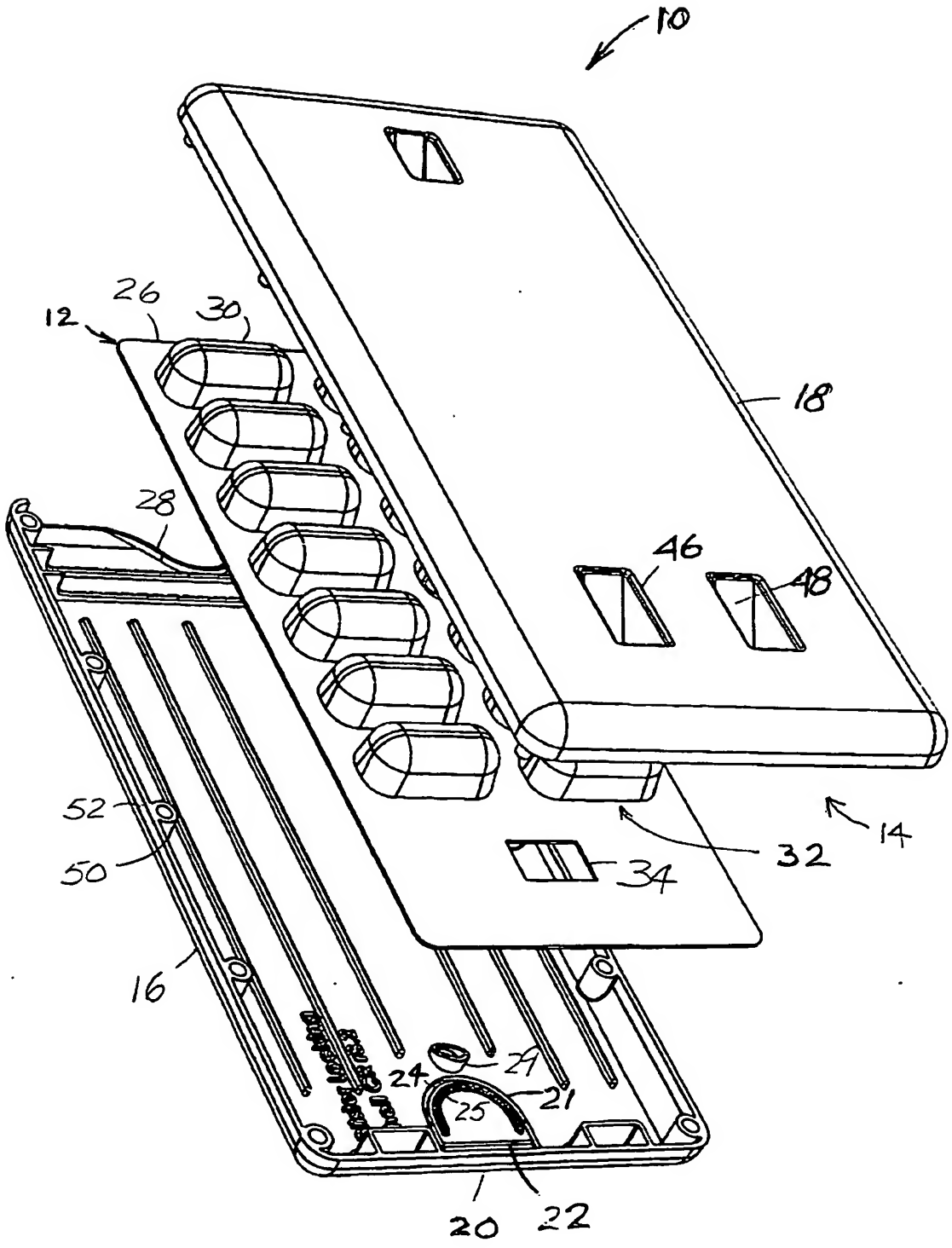


FIG. 1

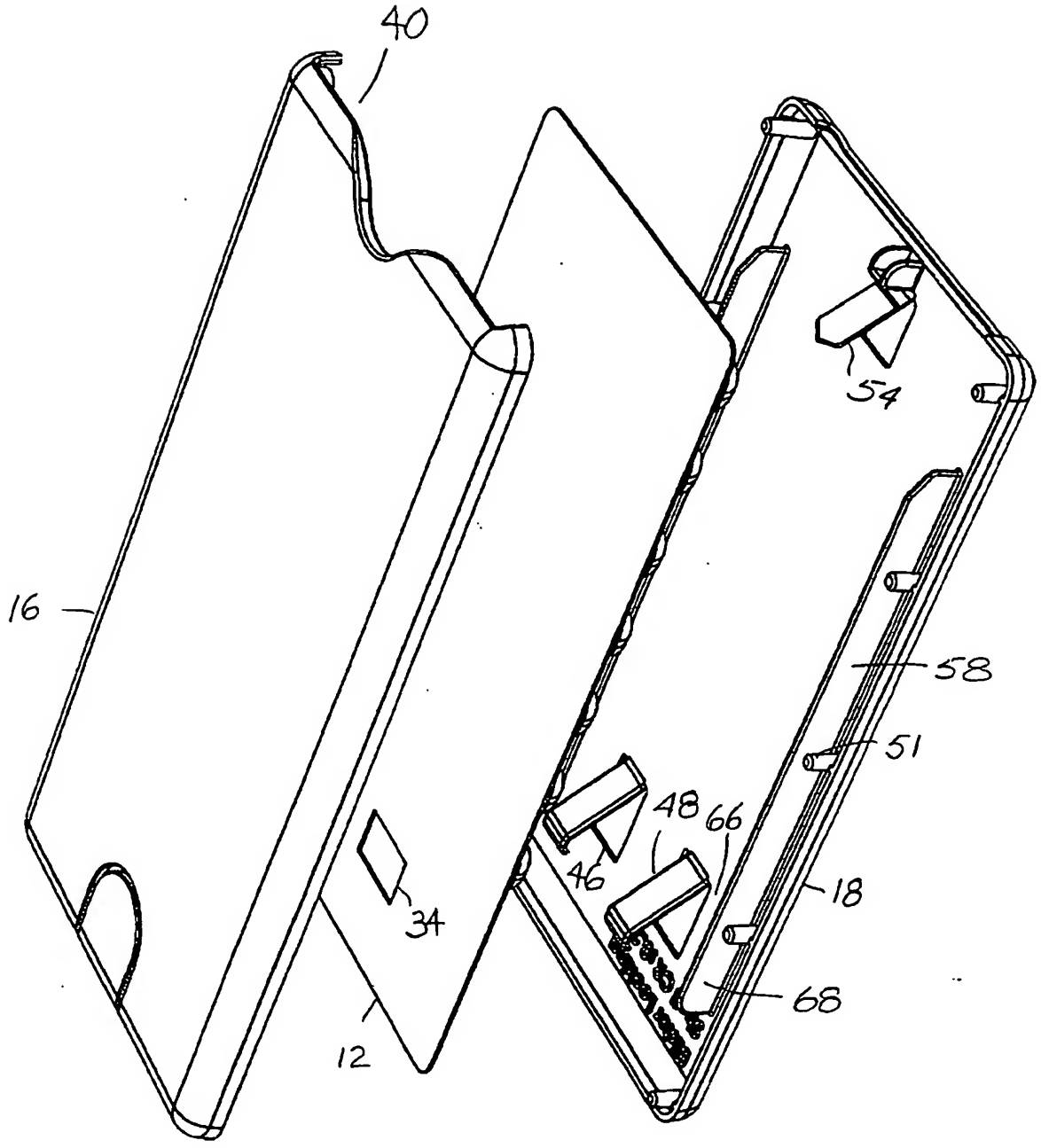


FIG. 2

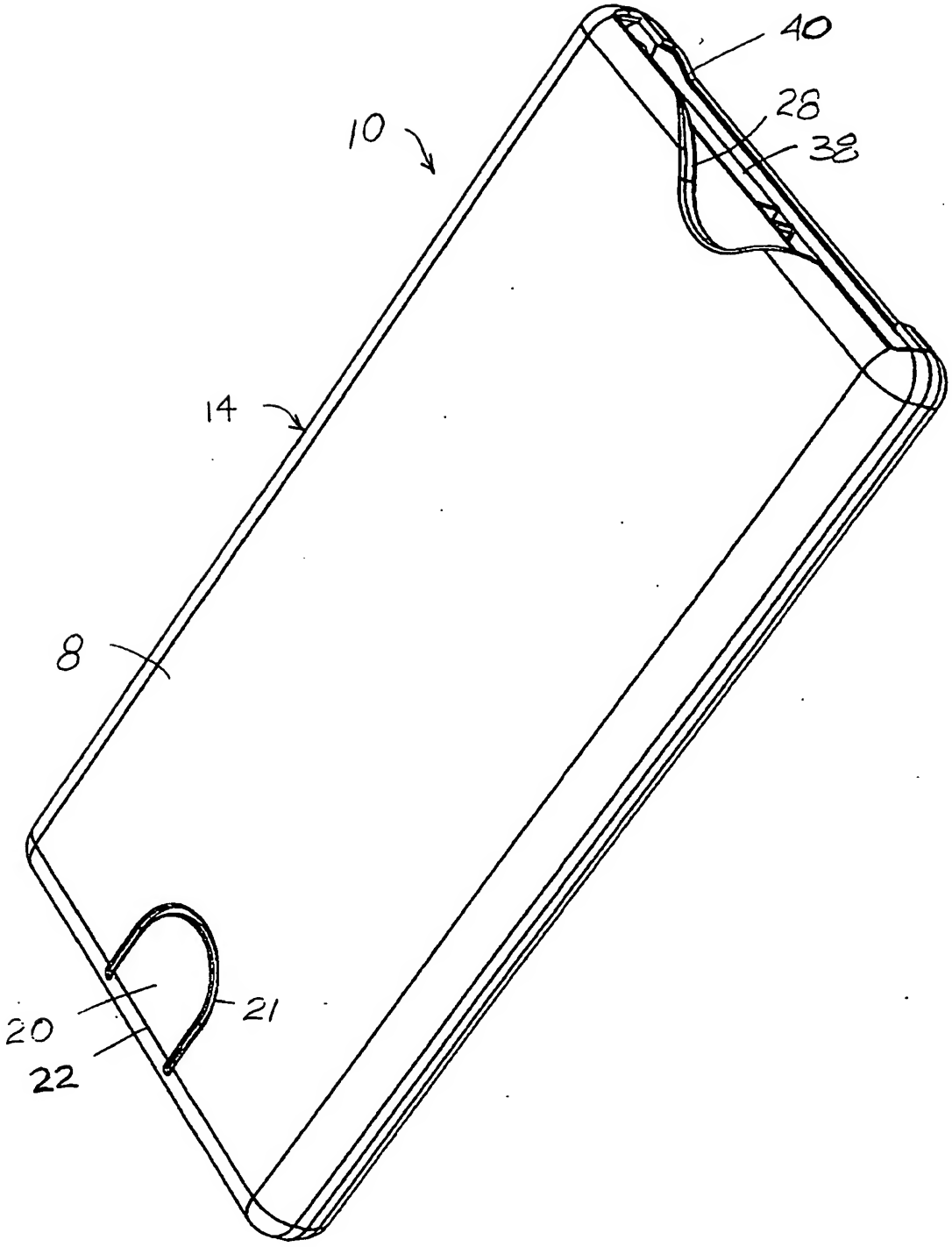


FIG. 3

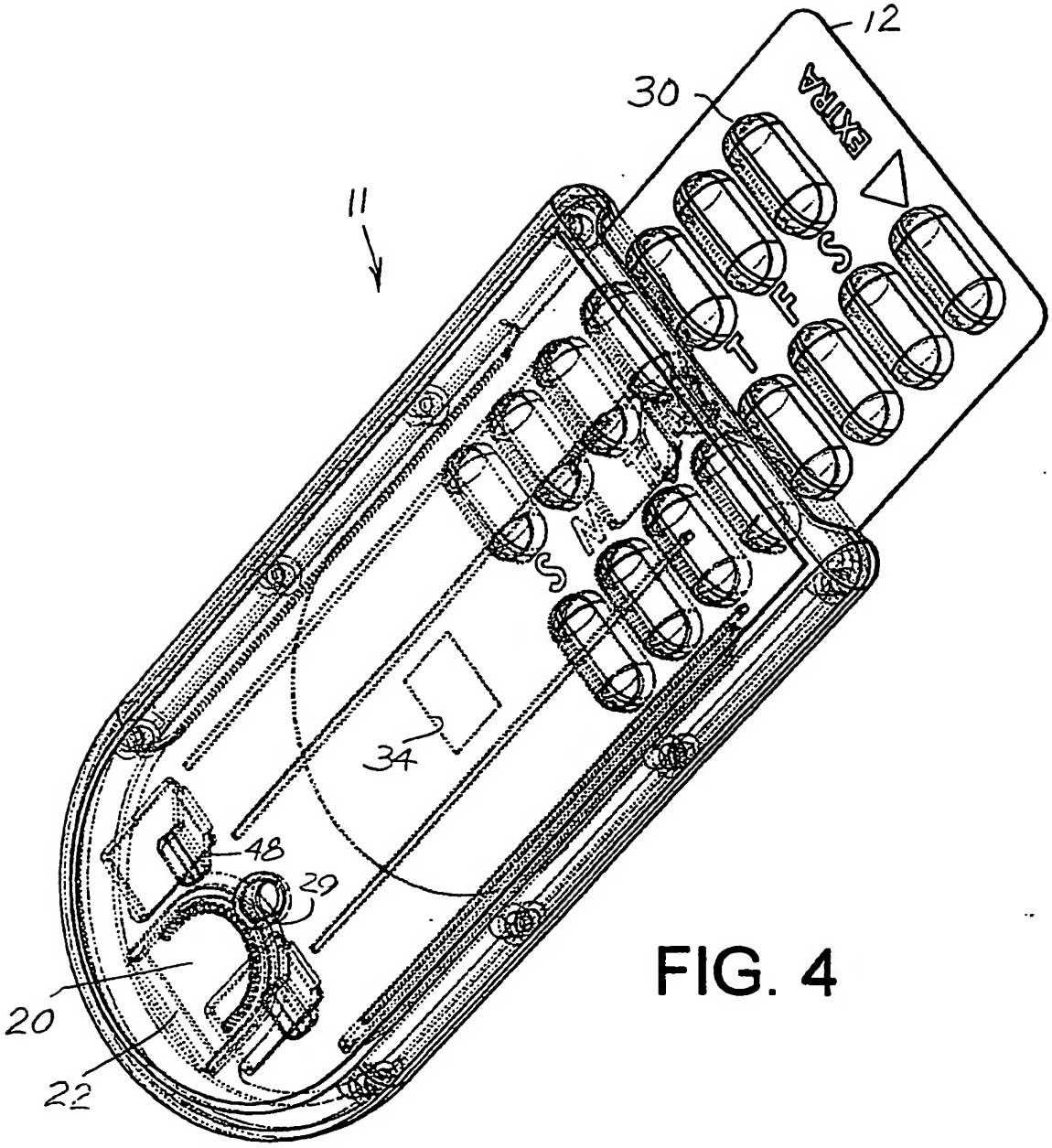


FIG. 4

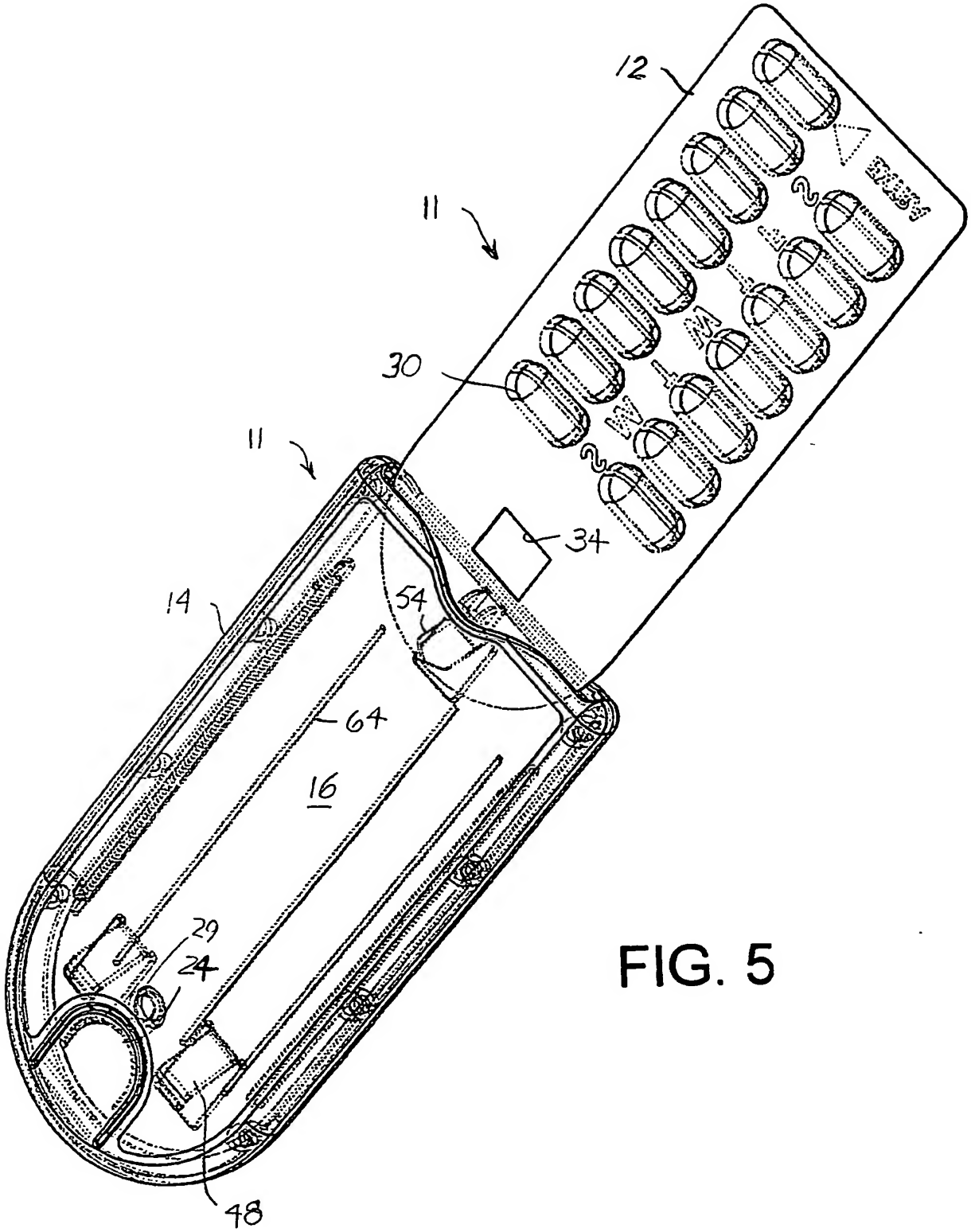


FIG. 5

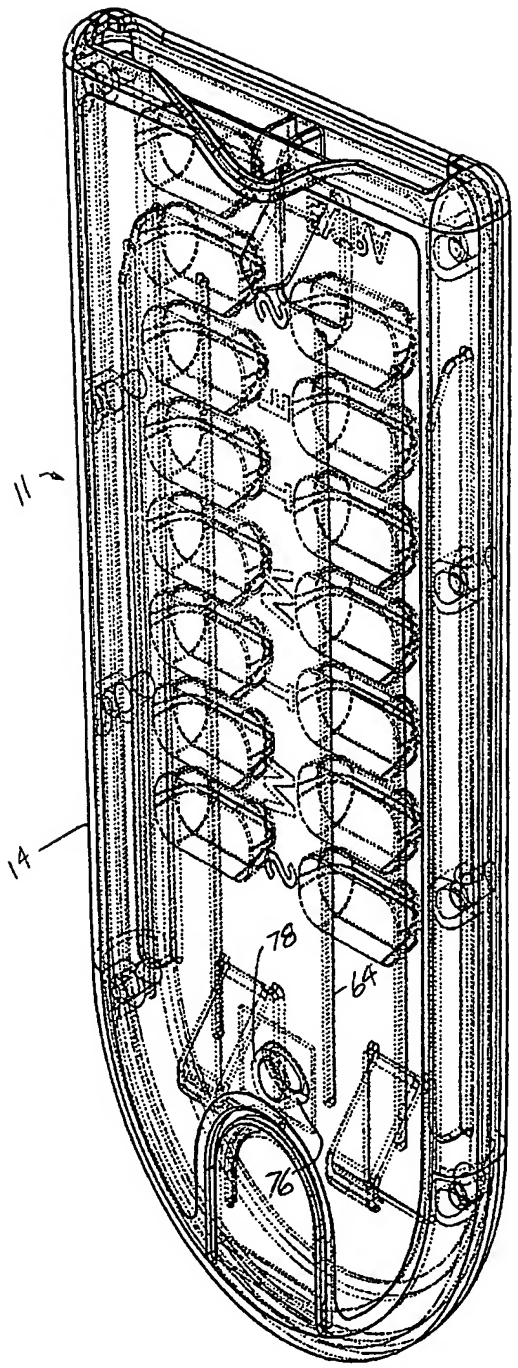


FIG. 6

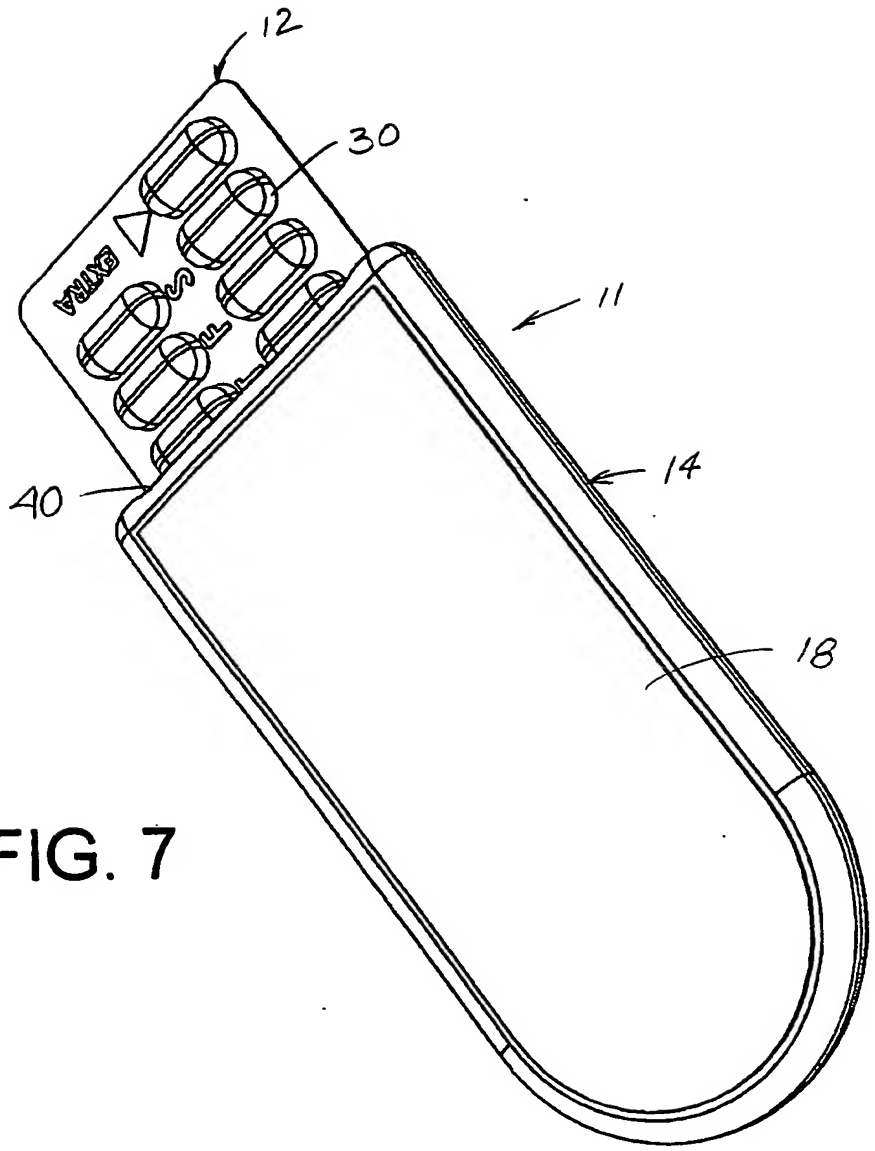


FIG. 7

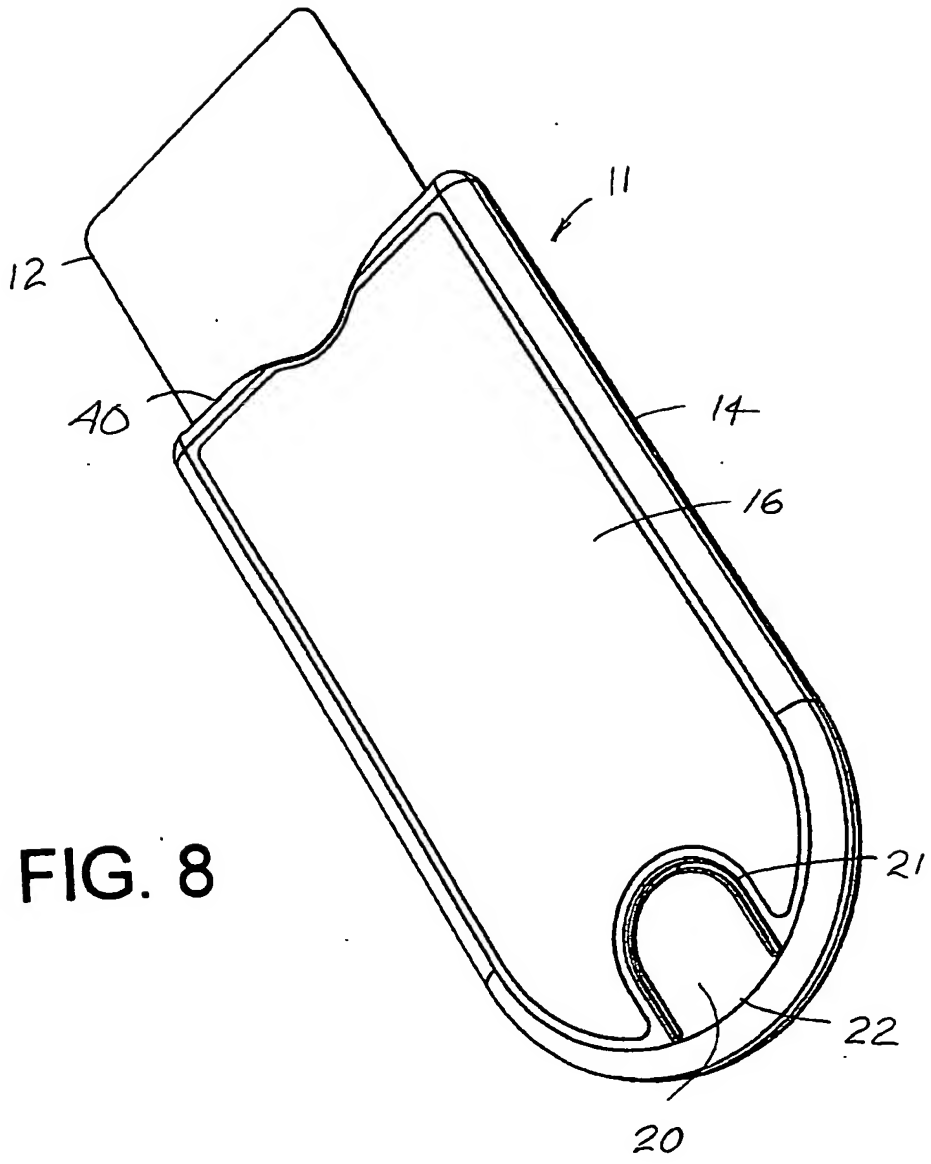


FIG. 8

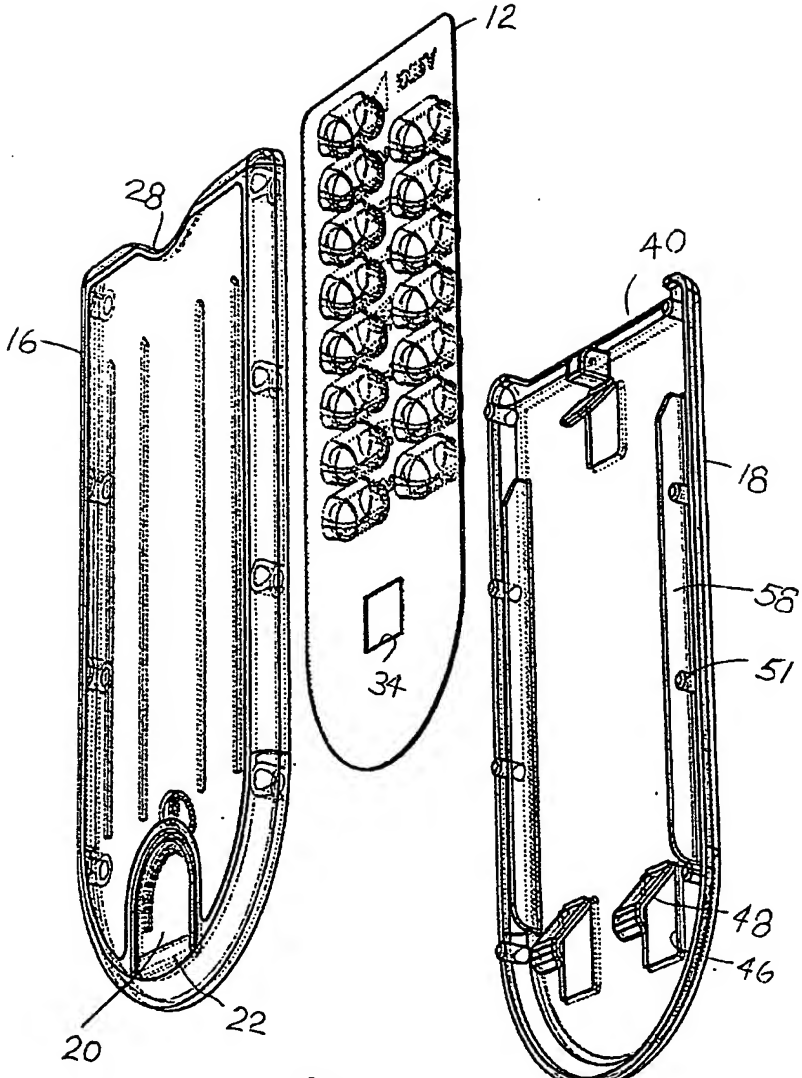


FIG. 9

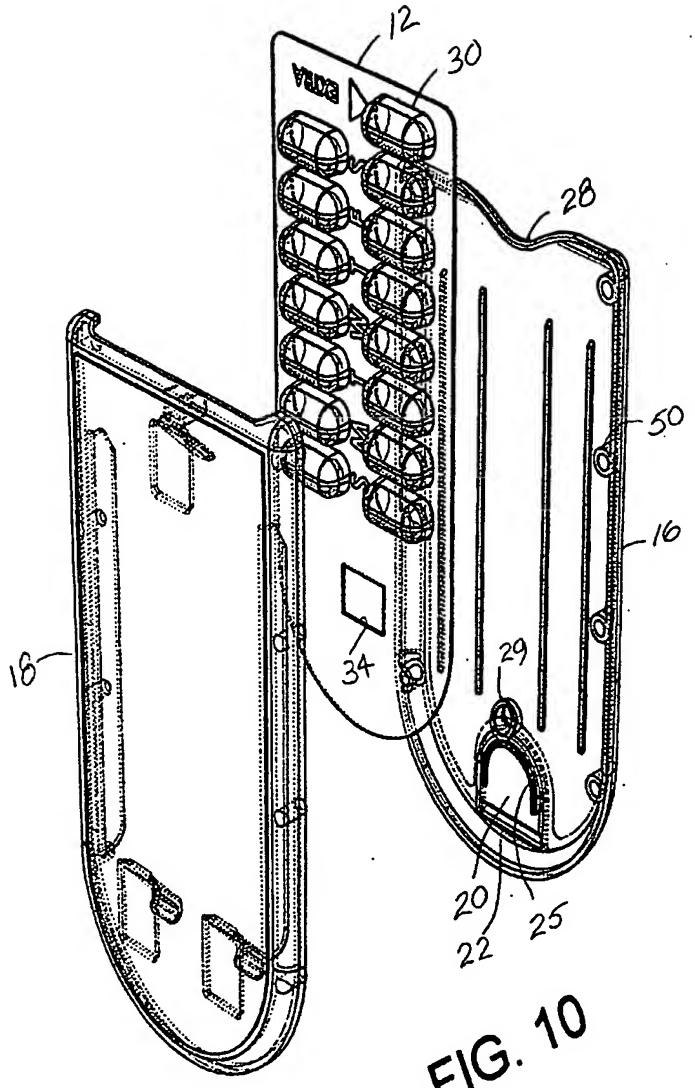


FIG. 10

10

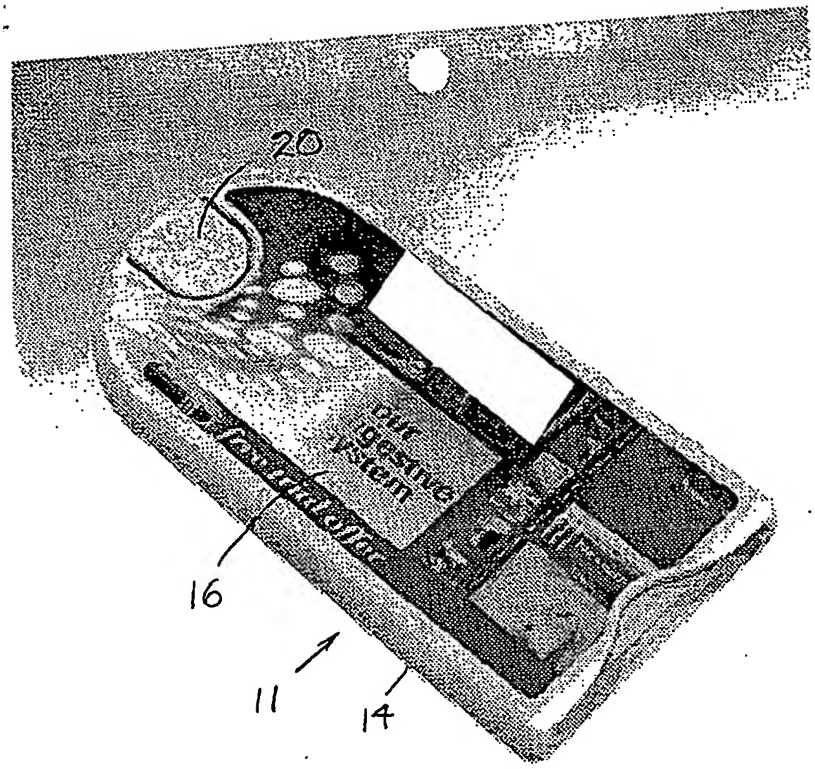


FIG. 11

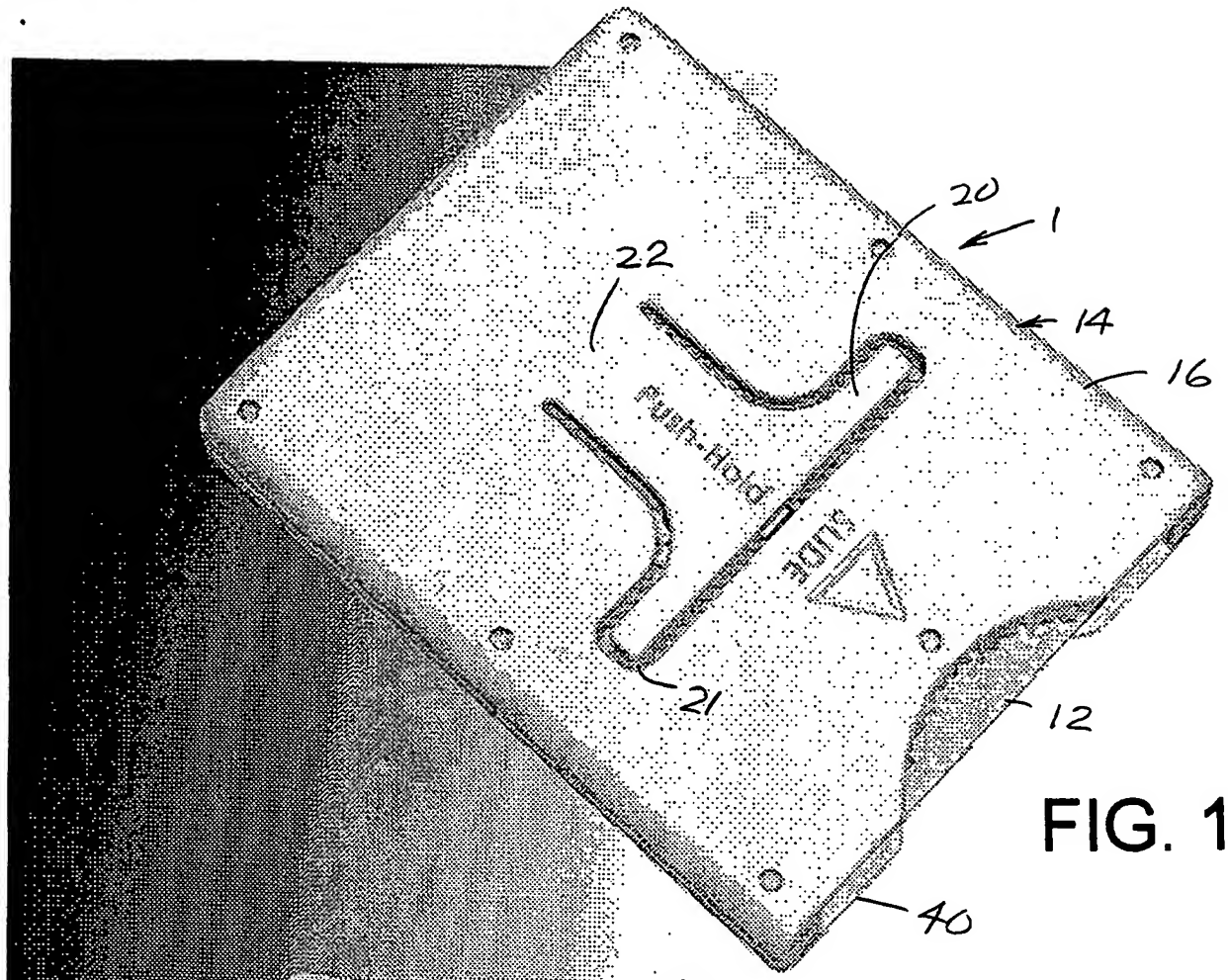


FIG. 12

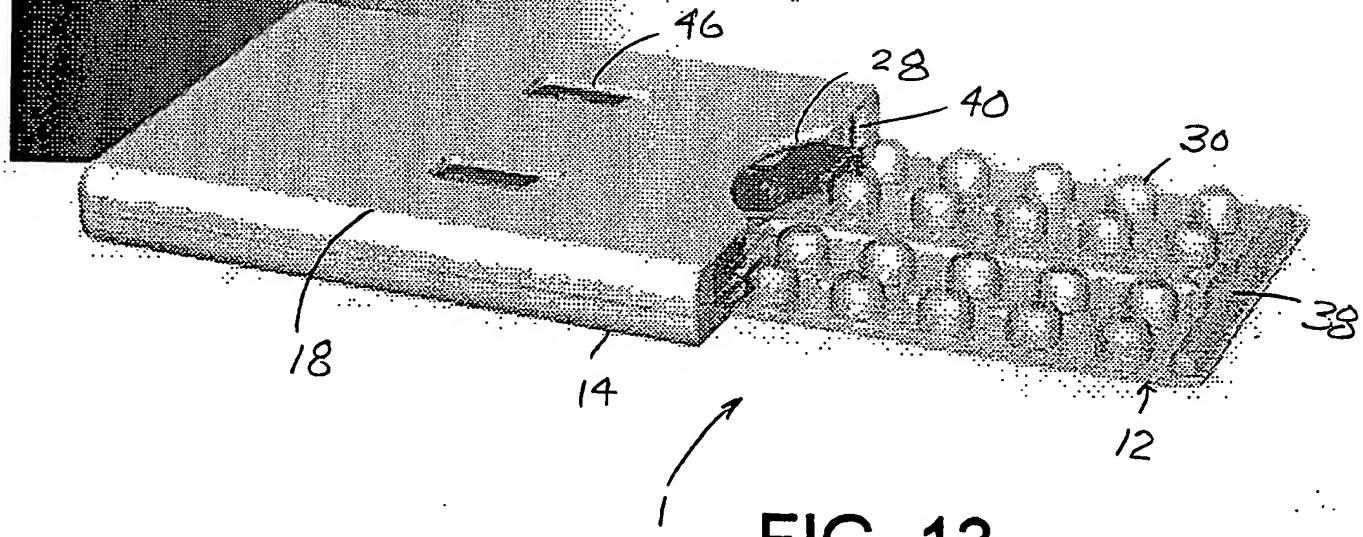
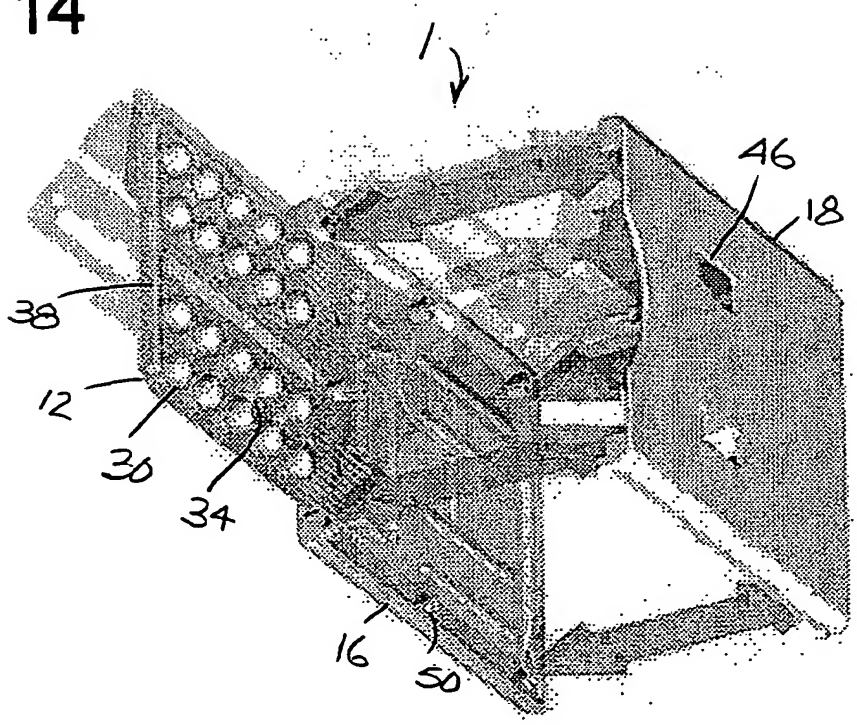


FIG. 13

FIG. 14



Document made available under the Patent Cooperation Treaty (PCT)

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